

Amendment to the Claims:

This listing of claims 1-13 will replace all prior versions, and listing of claims in the application. Claims 6, 12 and 13 have been amended.

Listing of Claims

1. (Previously Presented) A method of reconstructing a surface of an object; the object being represented by a 2-dimensional grid of measurements, where for each grid point the measurements include corresponding information on a first slope of the surface in a first direction and a second slope of the surface in a different second direction; the method including

selecting a 2-dimensional part of the grid over which an accurate reconstruction may be carried out

fitting a corresponding part of the surface to the measurements of all grid points in the selected part, thereby significantly reducing the effect of a localized measurement error to the area of the selected 2-dimensional part, and

providing a representation of at least the reconstructed surface part,
where the fitting for each grid point of the selected part is based on both the corresponding first and second slope information.

2. (Original) A method as claimed in claim 1, including performing the fitting through a least-square minimization operation.

3. (Original) A method as claimed in claim 2, including performing the least square

minimization operation by solving an equation that describes a shape of a soap film loaded with a pressure field equal to a divergence of a slope vector including the first and second slope information.

4. (Original) A method as claimed in claim 1, wherein the selected part of the grid is substantially the entire grid.

5. (Original) A method as claimed in claim 1, including measuring for each point of the grid the first and second slope using deflectometry.

6. (Currently Amended) A computer-readable storage medium comprising computer-readable instructions ~~program product~~ operative to cause a processor to perform the steps of the method as claimed in claim 1.

7. (Previously Presented) A system for reconstructing a surface of an object including:

an input for receiving a 2-dimensional grid of measurements representing a surface of an object, where for each grid point the measurements include corresponding information on a first slope of the surface in a first direction and a second slope of the surface in a different second direction;

a processor, under control of a program, for

(a) selecting a 2-dimensional part of the grid over which an accurate reconstruction may be carried out and

(b) fitting a corresponding part of the surface to the measurements of all grid points in the selected part, thereby significantly reducing the effect of a localized measurement error to the area of the selected 2-dimensional part, where the fitting for

each grid point of the selected part is based on both the corresponding first and second slope information; and

an output for providing a representation of at least the reconstructed surface part.

8. (Original) A system as claimed in claim 7, wherein the system includes a measurement unit for measuring for each measurement point of a measurement grid the corresponding first and second slope information.

9. (Original) A system as claimed in claim 8, wherein the measuring is performed along non-straight lines; the measurement grid being directly used for the reconstruction.

10. (Original) A system as claimed in claim 8, wherein the system the measurement unit includes a deflectometry measurement unit.

11. (Previously Presented) A method of reconstructing a surface of an object; the object being represented by a 2-dimensional grid of measurements, where for each grid point the measurements include corresponding information on a first slope of the surface in a first direction and a second slope of the surface in a different second direction; the method including:

selecting a 2-dimensional part of the grid over which an accurate reconstruction may be carried out and

fitting a corresponding part of the surface to the measurements of all grid points in the selected part, thereby significantly reducing the effect of a localized measurement error to the area of the selected 2-dimensional part,

where the fitting for each grid point of the selected part is based on both the corresponding first and second slope information,

whereby said fitting is performed through a least-square minimization operation by solving an equation that describes a shape of a soap film loaded with a pressure field equal to a divergence of a slope vector including the first and second slope information, and

providing a representation of at least the reconstructed surface part,.

12. (Currently Amended) A system for reconstructing a surface of an object including:

an input for receiving a 2-dimensional grid of measurements representing a surface of an object, where for each grid point the measurements include corresponding information on a first slope of the surface in a first direction and a second slope of the surface in a different second direction;

a processor, under control of a program, for
selecting a 2-dimensional part of the grid over which an accurate reconstruction may be carried out and

fitting a corresponding part of the surface to the measurements of all grid points in the selected part, thereby significantly reducing the effect of a localized measurement error to the area of the selected 2-dimensional part, where the fitting for each grid point of the selected part is based on both the corresponding first and second slope information; and

an output for providing a representation of at least the reconstructed surface part, wherein the system includes a measurement unit for measuring for each measurement point of a measurement grid the corresponding first and second slope information and wherein the ~~the system the~~ measurement unit includes a deflectometry measurement unit.

13. (Currently Amended) A computer program product comprising one or more computer-readable media having thereon computer executable instructions that, when executed by one or more processors of a system for reconstructing the surface of an object, cause the system to perform the following: ~~for reconstructing a surface of an object, the computer program product being embedded in a computer-readable medium and comprising computer instructions for-~~

select ~~[[selecting]]~~-a 2-dimensional part of the grid over which an

accurate

reconstruction may be carried out;

fit ~~[[fitting]]~~ a corresponding part of the surface to the measurements of all grid points in the selected part, thereby significantly reducing the effect of a localized measurement error to the area of the selected 2-dimensional part; and

provide ~~[[providing]]~~ a representation of at least the reconstructed surface part, where the fitting for each grid point of the selected part is based on both the corresponding first and second slope information.